QC ABSTRACT

NAME OF WORK: Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
2	DBM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
3	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2022-07-19-39**	**Date: 10-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.	
Address	:	Kodigehalli Division, BBMP, Bangalore.	
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08	
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92	
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	08-06-22	
Type of Mix	:	WMM (Wet Mix Macadam)	
Date of Test	:	08-06-22	
Oven Dry Weight	:	11000	Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	225	225	2.0	98.0	95-100
22.4	2248	2473	22.5	77.5	60-80
11.2	2175	4648	42.3	57.7	40-60
4.75	2385	7033	63.9	36.1	25-40
2.36	1768	8801	80.0	20.0	15-30
0.6	702	9503	86.4	13.6	8-22
0.075	1175	10678	97.1	2.9	0-5

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2022-07-19-39**	**Date: 10-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.	
Address	:	Kodigehalli Division, BBMP, Bangalore.	
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08	
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92	
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	08-06-22	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Date of Test	:	08-06-22	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	302.5	302.5
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	77.1	73.2
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.1	228.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	25.5	24.2
6	Aggregate impact value (Mean of two tests)	Pecentage	24.8	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-07-19-39** **Date: 10-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.
Address	:	Kodigehalli Division, BBMP, Bangalore.
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	08-06-22
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	08-06-22

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	23.4%	

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TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2022-07-19-39**	**Date: 17-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.	
Address	:	Kodigehalli Division, BBMP, Bangalore.	
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08	
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92	
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	15-06-22	
Type of Mix	:	DBM-Plant (Dense Bituminous Macadam)	
Date of Test	:	15-06-22	
Weight of Sample	:	5000 Grams	

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2022-07-19-39**	**Date: 18-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.	
Address	:	Kodigehalli Division, BBMP, Bangalore.	
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08	
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92	
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	15-06-22	
Type of Mix	:	DBM (Dense Bituminous Macadam)	
Date of Test	:	15-06-22	

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	15.0	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	9.0		
Strength	Aggregate Impact Value	19.0	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-19-39** **Date: 18-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.
Address	:	Kodigehalli Division, BBMP, Bangalore.
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-22
Type of Mix	:	DBM (Dense Bituminous Mecadam)
Date of Test	:	15-06-22

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-19-39** **Date: 18-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.
Address	:	Kodigehalli Division, BBMP, Bangalore.
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-22
Type of Mix	:	DBM(Dense Bitumnous Macadam)
Date of Test	:	15-06-22
Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2022-07-19-39**	**Date: 24-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.	
Address	:	Kodigehalli Division, BBMP, Bangalore.	
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08	
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92	
Customer Reference	:	BBMP/EE/BTP/WO/127/2020-21	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	23-06-22	
Type of Mix	:	DBM (Dense Bituminous Macadam)	
Date of Test	:	23-06-22	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.8
4	Average percentage	%	4.7	

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Lab ID : CP-RW-2022-07-19-39 Date: 24-06-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	22	22	4.6	95.4	90-100
19	47	69	14.5	85.5	71-95
13.2	47	116	24.2	75.8	56-80
4.75	150	266	55.7	44.3	38-54
2.36	67	333	69.7	30.3	28-42
0.3	50	383	80.2	19.8	7-21
0.075	60	443	92.8	7.2	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	32	32	6.7	93.3	90-100
19	48	80	16.8	83.2	71-95
13.2	38	118	24.8	75.2	56-80
4.75	146	264	55.5	44.5	38-54
2.36	64	328	68.9	31.1	28-42
0.3	55	383	80.5	19.5	7-21
0.075	59	442	92.9	7.1	2-8

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2022-07-19-39** **Date: 15-06-22**
Customer	:	Assistant Executive Engineer, Kodigehalli Division, BBMP, Bangalore.
Address	:	Kodigehalli Division, BBMP, Bangalore.
Project Name	:	Drilling of new borewell installation of motor, Commissioning and laying of pipeline in ward No.08
Agency	:	Sri.Srikanth K.S, Aakar Construction # 168, AMCO Layout near Godwin School, Sahakanagara Post, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/127/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-06-22
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)
Date of Test	:	13-06-22

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

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